Cyclin D2 promoter, MSP primers
Accn. No. U47284 Promoter region analyzed: -1616 to -1394 bp

1 gagct**CG**agc ca**CG**ccatgc c**CG**ctgca**CG** tgccagcttg **CG**cagcacat caggg**CG**ctg
61 gtctctcccc ttcctcctgg agtgaaatac accaaaggg**C GCG**gtggggg tggggggtga
121 **CG**ggaggaag gaggtgaaga aa**CG**ccacca gat**CG**tatct cctgtaaaga cagccttgac
181 tcaaggatg**C G**ttagagcaC Gtgtcagggc **CG**ac**CG**tgct gg**CG**gacttc ac**CG**cagt**CG**
241 gctcccaggg agaaagcctg gcagagtgag g**CGCG**aaac**C G**gagggt**CG**g **CG**aggatg**CG**
301 gg**CG**aaggac **CG**ag**CG**tgga ggcctcatgc ctc**CG**gggaa aggaaggggt ggtggtgttt
361 g**CG**cagggggg ag**CG**agggggg agc**CG**gacct aatccctcac t**CG**cccctc cccctcc**CG**g
421 gccatttcct agaaagctgc at**CG**gtgtgg cca**CG**ctcag **CG**cagacacc t**CG**gg**CG**gct
481 tgtcagcaga tgcagggg**CG** aggaag**CG**gg tttttcctg**C G**tggc**CG**ctg gg**CG**gggaa
541 c**CG**ctgggag ccctgcccc**C G**gcctg**CG**g**C G**gccctaga**C G**ctgcac**CGC G**t**CG**ccccac
601 gggccc**CG**aa gagcccccag aaaca**CG**atg gtttctgct**C G**aggatcaca ttctatccct
661 ccagagaagc accccccttc cttcctaata cccacctctc cctccctctt cttcctctgc
721 acacactctg cagggggggg cagaaggga**C G**ttgttctgg tccctttaat **CG**ggctttc
781 gaaacagctt **CG**aagttatc aggaacacag acttcaggga catgaccttt atctctgggt
841 atg**CG**aggtt gctattttct aaaatcaccc cctcccttat ttttcactta agggacctat
901 ttctaaattg tctgaggtca ccccatcttc agataatcta ccctacattc ctggatctta
961 aatacaaggg caggaggatt aggatc**CG**tt ttgaagaagc caaagttgga gggt**CG**tatt
1021 ttgg**CG**tgct acacctacag aatgagtgaa attagagggc agaaatagga gt**CG**gtagtt
1081 ttttgtgggt tgcctgtc**CG** gggcccctgg catgcaggct ggatggaggg agaggggtgg
1141 ggggtgg**CG**g gggac**CGCG**t ttgaagttgg gt**CG**ggccag ctgctgttct ccttaataac
1201 gagaggggaa aaggagggag ggagggagag attgaaagga ggaggggagg ac**CG**ggaggg
1261 gaggaaaggg gaggaggaac cagag**CG**ggg agg**CGCG**ggg agagggagga gagctaactg
1321 cccagccagc ttg**CG**tcac**C G**cttcagag**C G**gagaagag**C G**agcagggga gag**CG**agacc
1381 agttttaagg ggaggac**CG**g tg**CG**agtgag gcagccc**CG**a ggctctgct**C G**cccaccacc
1441 caatcct**CG**c ctcccttctg ctccaccttc tctctctgcc ctcacctctc ccc**CG**aaaac
1501 cccctattta gccaaaggaa ggaggtcagg ggaa**CG**ctct cccctcccct tccaaaaaac
1561 aaaaacagaa aaaccctttt ccaggc**CG**gg gaaagcagga gggagagggg c**CG**c**CG**ggct
1621 ggcc[redacted]gag

FIGURE 1A

MSP Unmethylated 223 BP

GT TA**TG**TTATGT T**TG**TTGTA**TG** **Forward UM 22 BP** MT 56

T AAAATC**CA**CC AACA**CA**AT**CA** **Reverse UM 21 BP** MT 56

Msp Methylated 276 BP

TAC GTGTTAGGGT CGATCG **F M 19 BP** MT 58

CGA AATATCTACG CTAAACG **R M 20 BP** MT 56

FIGURE 1B

Twist Promoter: Accn No. AC003986
Promoter Region analyzed: nts -51145 TO -51750

```
   1 cattggactg ggtttccttc cacCGaagag tgaacttctg cctctttCGa gcaccttcCG
  61 aggCGtagtc ctttggatgt tggggagCGt cagactgggt CGttgtagag gggaaaggag
 121 ggcccagaag ggCGagagag caggcCGgga CGcaaatcct cagccccCGC GgCGCGccaC
 181 Gtcttcagaa aCGccaggac ctcCGggctg ggcCGcCGCG gtttggcctt tggaactcaa
 241 gggttCGtct acctgaccat tgggtggctc CGCGgttgac acttttcttg gcatgccccc
 301 ccacccCGCG ccacaccacc cccccagccc cagcaatcca aatCGgcccc aCGgacctag
 361 agggctcttg ggCGagatga gacatcaccc actgtgtaga agctgttgcc attgctgctg
 421 tcacagccag tcCGgatggg gctgccacCG tggccaggac agtctcctC GacCGcttcc
 481 tgggctgCGc tagggttCGg gggCGctgcc CGcaCGctcC GgCGgggaag gaaatCGccc
 541 CGCGccCGcC GgaggaaggC GaCGgggagg gaaggggag ggCGgctagg aggCGggtgg
 601 aggggcCGgc CGccCGggcc aggtCGtttt tgaatggttt gggaggaCGa attgttagac
 661 ccCGaggaag ggaggtggga CGgggaggg ggactggaaa gCGgaaactt tcctataaaa
 721 cttCGaaaag tccctcctcc tcaCGtcagg ccaatgacac tgctgccccc aaactttcCG
 781 cctgcaCGga ggtataagag cctccaagtc tgcagctctC Gcccaactcc cagacacctc
 841 gCGggctctg cagcacCGgc acCGtttcca ggaggcctgg CGgggtgtgC GtccagcCGt
 901 tgggCGcttt ctttttggga cctCGgggcc atccacacCG tcccctcccc ctccCGcctc
 961 cctcccCGcc tccccCGCGC GccctcccCG CGgaggtccc tccCGtcCGt cctcctgctc
1021 tctcctcCGC GggcCGcatC GccCGggcCG gCGcCGCGcC Gggggaagc tggCGggctg
1081 aggCGcccCG ctcttctcct ctgcccCGgg ccCGCGaggc caCGCGtCGc CGctCGagag
1141 [redacted]atgcagg aCGtgtccag ctCGccagtc tCGcCGgcCG aCGacagcct gagcaacagc
1201 gaggaagagc cagacCGgca gcagcCGcCG agCGgcaagC GCGggggaCG caagCGgCGc
1261 aCGagcaggC GcaCGgCGgg CGgCGgCGCG gggccCGgCG gagCGggtgg gggCGtCGga
1321 ggCGgCGaCG agcCGggcag ccCGgcccag ggcaagCGCG gcaagaagtc tgCGggctgt
1381 ggCGgCGgCG gCGgCGCGgg CGgCGgCGgC Ggcagcagca gCGgCGgCGg gagtcCGcag
1441 tcttaCGagg agctgcagaC GcagCGggtc atggccaaCG tgCGggagCG ccagCGcacc
1501 cagtCGctga aCGaggCGtt CGcCGCGctg CGgaagatca tccccaCGct gccctCGgac
```

FIGURE 2A

1561 aagctgagca agattcagac cctcaagctg g**CG**gccaggt acat**CG**actt cctctaccag
1621 gtcctccaga g**CG**a**CG**agct ggactccaag atggcaagct gcagctatgt ggctca**CG**ag
1681 **CG**gctcagct a**CG**ccttct**C G**gtctggagg atggaggggg cctggtccat gtc**CGCG**tcc
1741 cac[redacted]cagg **CG**gagccccc cacccctca gcagggc**CG**g agacctaggt aaggac**CGCG**

FIGURE 2B

Unmethylated 193 BP

tt **TG**gatggggt tgttat**TGT** FUM (3) 21 BP AT 58

c ctaacc**CA**aa **CA**ac**CA**acc RUM (3) 20 BP AT 60

Methylated 200 BP

t tt**CG**gatgggg gtttgttat**C** FM (5) 20 BP AT 58

aaa**CG**ac ctaacc**CG**aa **CG** RM (4) 19 BP AT 58

FIGURE 2C

RAR beta promoter, MSP primers ACCN NO. AF157483

Promoter region analyzed: nt -196 to nt -357

1 gtgacagaag tagtaggaag tgagctgttc agaggcagga gggtctattc tttgccaaag
61 gggggaccag aattccccat g**CG**agctgtt tgaggactgg gatgc**CG**aga a**CGCG**ag**CG**a
121 tc**CG**agcagg gtttgtctgg gcac**CG**t**CG**g ggtaggatc**C G**gaa**CG**catt **CG**gaaggctt
181 tttgcaagca tttacttgga aggagaactt gggatctttc tgggaacccc c**CG**ccc**CG**gc
241 tggattggc**C G**agcaagcct ggaaaatgca attgaaacac agagcaccag ctctgaggaa
301 ct**CG**tcccaa gcccccatc tccacttcct cccccct**CG**ag tgtacaaacc ctgctt**CG**tc
361 tgccaggaca aatcatcagg gtaccactat ggggtcag**CG** cctgtgaggg atgtaagggc
421 ttttc**CG**ca gaagtattca gaagaat[redacted] atttacactt gtcac**CG**aga taagaactgt
481 gttattaata aagtcaccag gaat**CG**atgc caatactgt**C G**actccagaa gtgctttgaa
541 gtgggaatgt ccaaagaatc tgtcaggaat gacaggaaca agaaaaagaa ggagactt**CG**
601 aagcaagaat gcacagagag ctatgaaatg acagctgagt tgga**CG**atct cacagagaag
661 atc**CG**aaaag ctcaccagga aactttccct tcactctgcc agctgggtaa atacacca**CG**
721 aattccagtg ctgaccat**CG** agtc**CG**actg gacctgggcc tctgggacaa attcagtgaa
781 ctggccacca agtgcattat taagat**CG**tg gagtttgcta aa**CG**tctgcc tggtttcact
841 ggcttgacca t**CG**cagacca aattaccctg ctgaaggc**CG** cctgcctgga catcctgatt
901 cttagaattt gcaccaggta taccccagaa caagacacca tgactttctc aga**CG**gcctt
961 accctaaat**C G**aactcagat gcacaatgct ggatttggtc ctctgactga ccttgtgttc
1021 acctttgcca accagctcct gcctttggaa atggatgaca cagaaacagg ccttctcagt
1081 gccatctgct taatctgtgg agac**CG**ccag gaccttgagg aac**CG**acaaa agtagataag
1141 ctacaagaac cattgctgga agcactaaaa atttatatca gaaaaaga**CG** acccagcaag
1201 cctcacatgt ttccaaagat cttaatgaaa atcacagatc tc**CG**tagcat cagtgctaaa
1261 ggtgcagag**C G**tgtaattac cttgaaaatg gaaattcctg gatcaatgcc acctctcatt
1321 caagaaatgc tggagaattc tgaaggacat gaacccttga ccccaagttc aagtgggaac
1381 acagcagagc acagtcctag catctcaccc agctcagtgg aaaacagtgg ggtcagtcag
1441 tcaccact**CG** tgcaataaga ca

FIGURE 3A

Unmethylated 163 BP

ggattgg gatgt**TG**aga a**TGT** FUM 21 BP AT 60

C Aaccaatcca ac**CA**aaa**CA**a RUM 21 BP AT 60

Methylated 142 BP

ga a**CGCG**ag**CG**a tt**CG**agt FM(2) 19 BP AT 60

Gaccaatcca ac**CG**aaa**CG** RM(2) 19 BP AT 58

FIGURE 3B

Homo sapiens serine protease-like protease (nes1) mRNA, complete cds ACCESSION AF024605

```
   1 accagcggca gaccacaggc agggcagagg cacgtctggg tcccctccct ccttcctatc
  61 ggcgactccc agatcctggc catgagagct ccgcacctcc acctctccgc cgcctctggc
 121 gcccgggctc tggcgaagct gctgccgctg ctgatggcgc aactctgggc cgcagaggcg
 181 gcgctgctcc cccaaaacga cacgcgcttg gaccccgaag cctatggcgc cccgtgcgcg
 241 cgcggctcgc agccctggca ggtctcgctc ttcaacggcc tctcgttcca ctgcgcgggt
 301 gtcctggtgg accagagttg ggtgctgacg gccgcgcact gcggaaacaa gccactgtgg
 361 gctcgagtag gggatgatca cctgctgctt cttcagggcg agcagctccg ccggacgact
 421 cgctctgttg tccatcccaa gtaccaccag ggctcaggcc ccatcctgcc aaggcgaacg
 481 gatgagcacg atctcatgtt gctaaagctg gccaggcccg tagtgccggg gccccgcgtc
 541 cgggccctgc agcttcccta ccgctgtgct cagcccggag accagtgcca ggttgctggc
 601 tggggcacca cggccgcccg gagagtgaag tacaacaagg gcctgacctg ctccagcatc
 661 actatcctga gccctaaaga gtgtgaggtc ttctaccctg gcgtggtcac caacaacatg
 721 atatgtgctg gactggaccg gggccaggac ccttgccaga gtgactctgg aggcccccctg
 781 gtctgtgacg agaccctcca aggcatcctc tcgtggggtg tttacccctg tggctctgcc
 841 cagcatccag ctgtctacac ccagatctgc aaatacatgt cctggatcaa taaagtcata
 901 cgctccaact gatccagatg ctacgctcca gctgatccag atgttatgct cctgctgatc
 961 cagatgccca gaggctccat cgtccatcct cttcctcccc agtcggctga actctcccct
1021 tgtctgcact gttcaaacct ctgccgccct ccacacctct aaacatctcc cctctcacct
1081 cattccccca cctatcccca ttctctgcct gtactgaagc tgaaatgcag gaagtggtgg
1141 caaaggttta ttccagagaa gccaggaagc cggtcatcac ccagcctctg agagcagtta
1201 ctggggtcac ccaacctgac ttcctctgcc actccccgct gtgtgacttt gggcaagcca
1261 agtgccctct ctgaacctca gtttcctcat ctgcaaaatg ggaacaatga cgtgcctacc
1321 tcttagacat gttgtgagga gactatgata taacatgtgt atgtaaatct tcatgtgatt
1381 gtcatgtaag gcttaacaca gtgggtggtg agttctgact aaaggttacc tgttgtcgtg
1441 aaaaaaaaaa aaaa
```

FIGURE 4A

Sequence analyzed: nts +169 to +349
Exon 3 sequence

c**CG**cagagg**C G**g**CG**ctgctc ccccaaaa**CG** aca**CGCG**ctt ggacc**CG**aa gcctatgg**CG** ccc**CG**tg**CGC**
GCGCGgct**CG** cagccctggc aggtct**CG**ct cttcaa**CG**gc ctct**CG**ttcc actg**CGCG**gg tgtcctggtg gaccagagtt
gggtgctga**C G**gc**CGCG**cac tg**CG**gaaaca a

FIGURE 4B

Unmethylated 128 BP

t**TG**tagagg**T G**g**TG**ttgttt Nes1 FUM 20 BP AT 56

CACAcaat aaaa**CA**aaaa ac**CA** Nes1 RUM 22 BP AT 56

Methylated 137 BP

tt**CG**aa gtttatgg**CG** ttt**C** Nes 1 FM 20 BP AT 56

t tatttc**CG**ca ata**CGCG**ac Nes1 RM 20 BP AT 58

FIGURE 4C

HOX A5 Promoter 3' to 5' AC004080

16321 accaagagag actgggagag gg**CG**gcagag aagagagggg ggac**CG**agag c**CGCG**tcccc
16381 g**CG**gt**CGCG**t ggatttagaa aaaggctggc tttaccatga cttatgtgca gcttg**CG**cat
16441 ccaggggtag atctggggtt ggg**CG**gg**CG**g **CG**c**CG**ggct**C** **G**gct**CG**ctct g**CG**cact**CG**c
16501 ctgct**CG**ctg ctggcagggg **CG**tcctcct**C** **G**gctc**CG**ga**C** **G**c**CG**tgccaa ccccctctct
16561 gctgctgatg tgggtgctgc **CG**g**CG**t**CG**gc **CG**agg**CG**c**CG** ctggagttgc ttagggagtt
16621 tttcc**CG**c**CG** tggtggctgt **CG**ctgc**CG**gg **CG**agggggcc a**CG**g**CG**gagc agggcag**CG**g
16681 at**CG**ggctga ggagagtg**CG** tgga**CG**tggc **CG**gctggctg tacctgggct **CG**g**CG**gg**CG**c
16741 **CGCG**ctgg**CG** ctggcag**CG**t agctg**CG**gg**C** **GCG**ctctc**CG** gagccaaagt ggc**CG**gagcc
16801 **CG**ag**CG**gc**CG** a**CG**ctgagat ccatgccatt gtagc**CG**tag c**CG**tacctgc **CG**gagtgcat
16861 gct**CG**c**CG**ag tccctgaatt gct**CG**ctca**C** **G**gaactatga tctccataat tatgcaactg
16921 gtagtc**CG**gg ccatttggat ag**CG**ac**CG**ca aaatgagttt acaaaataag agct[redacted]ttg
16981 ttttttgata tgtgtgcttg atttgtggct **CGCG**gt**CG**tt tgtg**CG**tcta tagcaccctt
17041 gcacaattta tgatgaatta tggaaatgac tgggacatgt acttggttcc ctccta**CG**ta
17101 ggcacccaaa tatggggta**C** **G**actt**CG**aat ca**CG**tgcttt tgttgtccag t**CG**taaatcc
17161 tgcctgatga cctctagagg taaact**CG**tg cactaatagg ggagttgggt ggagg**CG**agg
17221 ggggtgg**CGC** **GCGCG**ccc**CG** gg**CGCG**tgcc **CG**c**CG**ccagt tgc**CG**c**CG**tt cagc**CG**gact
17281 **CG**ag**CG**ccac c**CG**ctggagg cagggctcat **CG**cccagctt c**CG**ac**CG**ggg gctgcaaggg
17341 c**CG**ggt**CG**a attgaggtta cagcccatta tggcaaaatt attgcatttc cct**CG**cagtt
17401 ccattaggat gtaccaattg ttaggc**CG**tc agctgc**CG**at **CGCGCG**cc**CG** g**CG**aggatgc
17461 agaggattgg

FIGURE 5A

Complement- 5′ to 3′ Promoter region analyzed: nts -97 to nts -303

ccaatcctct gcatcct**CG**c **CG**gg**CGCGCG** at**CG**gcagct ga**CG**gcctaa caattggtac atcctaatgg
aactg**CG**agg gaaatgcaat aatttgcca taatgggctg taacctcaat t**CG**accc**CG**g cccttgcagc
ccc**CG**gt**CG**g aagctggg**CG** atgagccctg cctccag**CG**g gtgg**CG**ct**CG** agtc**CG**gctg aa**CG**g**CG**gca
actgg**CG**g**CG** ggca**CGCG**cc **CG**ggg**CGCGC** **GCG**ccacccc.cct**CG**cctcc acccaactcc cctattagtg
ca**CG**agttta cctctagagg tcatcaggcaggattta**CG**a ctggacaaca aaagca**CG**tg att**CG**aagt**C**
Gtaccccata tttgggtgccta**CG**taggag ggaaccaagt acatgtccca gtcatttcca taattcatca
taaattgtgc aagggtgcta taga**CG**caca aa**CG**ac**CGCG** agccacaaat caagcacaca
tatcaaaaacaa[redacted]agct cttattttgt aaac[redacted]aaatgg cc**CG**gactac
cagttgcata attatggaga tcatagttc**C** **G**tgat**CG**agc aattcaggga ct**CG**g**CG**agc atgcactc**CG**
gcaggta**CG**g cta**CG**gctac aatggcatgg atctcag**CG**t **CG**gc**CG**ct**CG** ggctc**CG**gcc actttggtct
CGgagag**CGC** **G**cc**CG**cagct a**CG**ctgccag **CG**ccag**CGCG** g**CG**cc**CG**c**CG** agcc[redacted]
[redacted]ca**CG**tcca **CG**cactctcc tcagcc**CG**at

FIGURE 5B

UnMethylated 213 BP

tTGgtTGg aagttgggTG **FUM 18 BP** AT 56

gtaTGtg attTGaagtT Gtatt

aataC AacttCAaat caCAtac **RUM 22 BP** AT 56

Methylated 183 BP

tttagCGg gtggCGttCG **FM 18 BP** AT 58

taCGtg attCGaagtC Gtat

ataC GacttCGaat caCGta **RM 20 BP** AT 56

FIGURE 5C

Sequencing 307 BP

attttgtta taatgggttg taat Hox A5 Seq. F 23 BP AT 56

ggag ggaattaagt atatgtt

aacatat acttaattcc ctcc Hox A5 Seq.R 21 BP AT 56

[redacted]

[redacted] Hox Exp F 20 BP AT 60

ccaggta cagccagccg gc

[redacted] Hox Exp R 18 BP AT 62

FIGURE 5D

Homo sapiens 14-3-3 sigma protein promoter and gene, complete cds.
ACCESSION No. AF029081

```
   1 ggatcccagc ctgcccctcc acttctctcc caagccaggt cccggcatgg gtgggttatg
  61 ctcatgctgg caatacttga aacgggttta ttaatgctgg gtattttgca caattttata
 121 gacctctttt ctacatagtc tttttaaat ggaaggagaa aatgtcagcc acattactgt
 181 ctgtgtagtg ccaggtgaag ggttatcaga aggctggttg gttttaataa gtttattcca
 241 agagaccttc tggctggaat gagtgagagt gtgtgtgcat gtgtgtgtgt gttcatgtgt
 301 gccctgtatg aatgtggctg gctcccagat cccctgggct gccccctgcc ccatcccctt
 361 tgagtatcag aagcactctg agccaagggg acagggggca cgtgcactgg tcacgagaaa
 421 accctgggct cccactgggg ctcagcccag cctcctatct ttccttcttc tatggacttc
 481 agacagccag tgtctgggga ctctgccact ctacccccag ccctacccac cagcccccag
 541 gtgaggcttc cagctgggac ctgcccagac aggctgagcc tgggcgtggt gggtggggtg
 601 atggctctgg ggagcggctg ccatcctaca agccacaccc cctcctctga gctctgaata
 661 tgggacccag tgccaggagc tggaagacaa ggtgtttctg ccaaacggga cctccatcca
 721 gagaaaagga agaaggtgca gggtgggcca agaggcaagt gaaggttggc ctgagtctgg
 781 gccggaaact cagaggatgt ttctcctctg ctgggagctg tagtttctta tcaaaataga
 841 tattgttcca ccatcccccct ccttggccct tcaagtgggc tgaagccttg gaaagtgaca
 901 taggaagtcc ccagatcttg cccttctcac tccagaggct agtggtcaca gacagctggg
 961 aatggcagcc acagagggtc cctctggaga aacagcttca ccccagcctc agggccctgg
1021 gcatcactgc agtggccctg ggaggtgagg aagaagctgg ctagaggagg gggctcccac
1081 ctacctttta tttaagccag tattctttgt tcctgcttgt aataaaactt cagtttataa
1141 gagttgcttt gctttggttt ggtttttgtt tgcttttcct ttgctgaggc cccaactggg
1201 agccctctgt tctttcagac aaatttggtt ctttcctggg gagactgtga gaaggcaggc
1261 agcccagtga tctggctaca ttttccctca cctggctgga gctctgtccg ctggaggaag
1321 agcagagagg gctgcggctg agccccccatg ggcacgtgaa aagaggccat cctgtcccct
1381 ctttgtcccc tccaccttcc cctgcctcag gggcttggag accccaaatt cttcttccct
1441 actgcctttc cactccgatc cccaatgagt gcccagctaa gaaaatgttt gagacagtag
1501 attccagttt gagagccgga gcttccctgg ctaccacctc caacctgggc accagggccc
1561 agccagacaa ctcataacac tggcccacct ctctggtatc tccctcagga ggacacctgt
```

FIGURE 6A

```
1621 caggatttg ccatctcctg cacagcctga ggggagctaa caggcctctt tgcagagggt
1681 tagctggtaa gaccgtttct tccctgtcgg ccagcactgc ccgctcccct ccacacacca
1741 tctcatcctc atcgcatgcc tcgccaaccc catggagccc gtccatctgt ctggtgtgtg
1801 gtgcggtgtg tgtgctggtg gtggtagggt ctccagggac tccccgctaa gcagaaggat
1861 cgggatatag ggcaaggcta aaagcccagc cccattgtgg actgaggaag tacgttcgcg
1921 cagagcagct ctccagctgg aagaggaggt ggagggtgag gctggggaga ggatggcgaa
1981 cctgccctga ggtgcttggg tctgtgctgg tggggtcctg gtatgcaggg gccaccggtc
2041 actaacactc ttatgtcctg gctttctgtc cccgctgagc tttctctcac ccgcccgttt
2101 tctctcctgc ttcattgcct gctgcctaag ccttggccct tctctcgggc agaggcaggt
2161 gctgtggcag cacctctccc caccaccggg cccctgcagg ccgcctccct cctcccaggc
2221 ctgctaaccc tctctcttct ccttctttgc tgtcctgccg gggatctcca gtgtgtgcgg
2281 gggcttaagg acctcctgag gaccgctgct ctctgcctct ccaggaatgg cctgggggga
2341 gccaggcacc cggcacctcc acctgcctaa cctgtggccc atctgccacc atctgtgcct
2401 acagggtctg ccccccagcc tgcccggcct gtgtgctctc taggacccca tagggggcag
2461 gggctggcct ctttgcccca ttcccgctcc atgccggcca gagtgtagaa agccataacg
2521 cacgcagcca tcagcacaat aatgtgactc tacgctgata tgctccctct ctcctccact
2581 gacttcccct tcccggattt gtgaggtgtc aagactagga atctggcctt agagcctgcc
2641 cctccacccc ctcagatcag gcatagccat agtcaagccc agcaggtttc ctcaggagct
2701 gtctggggtg ttgatggtgg atgacgctgc tgaacaagtt tggtgactgt tctaagcaca
2761 actggcttga tactgttccc acggcctgtc cacctcccac ccccaaccct ccaccagagt
2821 aggtaggatg tagggagggt gcgtgccgcc tttgctctag gcactgaggg accaagctag
2881 ccgtgcacag ccccatacac ttcaggggcg taaaggaaag agctgagcca aggaaaatca
2941 gctgagccca gggctggggg ctgcttgtct gctatcctgt accttttttt tttttaacca
3001 aaataaagat tcccctcttc ttgccatacc attggctgtc tggtggcgcc tttactttgg
3061 ggcccaggga tgggacctgc agtgggcgtg tggaacatat ggctccccct cgctcccagc
3121 tttcttccag ctggccagtg ctgctctgga gatttacaag cacaacgaag ccaggaggga
3181 cacaggaaaa gtggctgaca tccttttcac tctgcccctc cagaactctt ggtctcaatt
3241 ccagacacca cccagcctta gctgacctct ggattctgat aggtcccagt gcaggctgag
3301 acagagggtt taactccagt ttgggactgc catacccatg aactgagccc agcccagggt
3361 aacgatctca tggaaacttc tctctcccca gttgctgcac tacatcaaga tacacacatg
3421 tgcatacact gtactatggg ctaaaaaaat acgtaccgct accgttcagc aagggcttgc
```

FIGURE 6B

```
3481 cgagtcccgg gcccattttc tcatcttaac ctgtgaggag gatgatgtca gcctttttac
3541 agatgaggga actgagactc aaggaagaaa caggagctgc ccaaggtcac ccagctggca
3601 aagcagcaaa tcccagatcg gaacctgatc tctgccccga gctctgagcc atctgcacta
3661 cccaaggaat gaatacagcg gtgggaggat gagatcttgg agaaacccta aaattagaga
3721 atgtcatagc cagtagaggg cttagagttg atctgggcca gcctccttgt tttactgatg
3781 gagaaattga agcccagagg caggaaggga cctgcccaag gccttataac agagctggga
3841 tgcagtccca cactctgacc tcattccatt ctctctccat aaattctgca ctgtctctag
3901 actggactgg tttagatgtg ggatactcta aacagcagtg ccttcaagag aaaaagaatc
3961 agaactacga atcacttaaa agtaatgtaa gctactctgg gcacactgcc tatggggtcg
4021 ccctgctcca caaggagcca caaaaataat taaaataatt taatatccct tcccaaaggt
4081 aaccagtaaa gtaagctctt ggctaggtaa ctggactctt gttcacaact agccagtggg
4141 aaaaggtgct agagcttcct ctggccacct gtttaatttg atcattccaa gacagaaaca
4201 tttcttagga agttctttct agaatctacc tggtgtccct cccactgcta tcagagccct
4261 gtcctctgtc ctcagtggag gtagagagca aatggttgct gctttcttca tcacaaccct
4321 tcaaagccta ttattaccag ctaagaagga ttggttgact atgggccaga gcccctgagc
4381 ctgctggtag aatggatgct gtacaggagg gtggggaggt agcaggcaga atgaggaaag
4441 ccccttttgag ctgcaacccc agctcctgtc ctgctgactc agacagctga ctgtggagct
4501 ccatgccctg ccagggcctg ctgcctcctg cccgtctgag ctcctgaact tgggaaatgg
4561 aggcccagag gcaaagggag gtacctgaga caggaactga gtcaggatca acaggccaga
4621 gcgggcagga ggtatcaggc agcctggctc ccagatgcac ccctgagctc cagcagggga
4681 ggagtaggaa tgaaggggct tccttgccct tgctcatggc tatgcggagg gcgtgaacca
4741 ccaccaggtc ctctggctta agtggcggga agcaaatggt ccctccctgg actcaggctc
4801 caaagttcct gggcctgcct tccaggttcc cagtgtcctg ggatctccag ctttccccag
4861 gacttgggga agccccggct ggatgactag tacaaatgaa ggcccctgag gttccaggac
4921 ctgctgaggt cacaggaata tcctagatca agcttgtcca acccacggcc cacaggctgc
4981 atgtggccca gaatggcttt gaatgcagcc caacacaaat tagtaaactt tcttaaaaca
5041 ttatgagatt tttttgcaaa tttttttttt tttttagct catcagttat tggtagtgtt
5101 ggtatatttt atgtgtggcc caagacaatt cttccaatgt ggcccaggga agccaaaaga
5161 ttggacacgc ctgtcctaga tggagaggaa ggaggcagtg ctgagcacat ctggccattc
```

FIGURE 6C

```
5221 atccatctgg agagagaagg ctatgggcaa actgcttcct ctcccctgta gacacccagc
5281 tgggaaggtc tggcctttgg taagtcctgg cttggggtcc ttcctcattt cacagaacct
5341 aactctatgt tagtgctttg tgagtatatg ttgatcataa taaagttgac gggatttttt
5401 cacatgataa taatagttgt catctggccg ggcatggtgg cttatgccta taatttcagc
5461 actttggaag gctgaggcag gtggatcact tgaggtcagc tgttcgagac cagcctggcc
5521 aacatggtga aaccacatct ctacttaaaa aaaaaaaaaa tacaaaaatt agctgggtgt
5581 ggtggtgcac ccttgtaatc ccagctactc gggaggctga ggcaggagaa tcacttgaac
5641 ccaggaggtg gaggttgcag tgagctgaga ttgtgccact acactccagc ctgggtgaca
5701 agagcgaaac tccgtctcaa aaaaaaagaa aataataata ataatagttg ccatccattc
5761 tactgtgctt tccattaact cgtgtaatcc tcacaagtcc cattttatag ttacaggaac
5821 tgaggctcac agagcttaaa tcacttggcc aaggccacaa acagctataa gaattacatt
5881 taggcagtct gattccaaag atactagtct attctgtatc tcatagacaa acaatacata
5941 ttcacttttt tgttgttgtt ttgttttgag acggagtctt gctctgtcac ccaggctgga
6001 gtgcagtggc gccatctcgg ctcactgcaa cgtccgcctc ccgggttcaa gcgattctcc
6061 tgcctcagcc tcccgagtag ctgggactac aggcatgtgc caccatgccc ggctaatttt
6121 ttgtattttt agtagagaca gggtttcct gggttagcca gaatggtctc gatctcctga
6181 ccttgtgatc cacccacctc agcctcccaa agtgctgaga tgacaggcgt gagccaccgc
6241 gtccgaccta tattcactat ttataaattg gagagaataa gaaaatcaaa agggccaggt
6301 gtagtgactc acacctgtaa tcccagcact ttgggaagcc aaggcaggag gattgcttga
6361 acccagaagt tcgagaccag cctgggcaac atggtgagac cctgtctcta caaaaaatac
6421 aaaaattagc tgggcgttgt ggtgagcacc ttattcttag gaagctgagg caggaggatc
6481 acctgaggcc aaggaggttg agactgcagt gagctgtgat cataccactg tacttcagcc
6541 tggacatcag agtaagaccc tatctctaaa aaggaaattg agaagaaaga aaatcaaagg
6601 gaagcaaaat cactcactct cactacctca agataccctc tagaagttgg tattttagtg
6661 tggttcctat tgttttctgt gtcagttctc tgatttgagc aaaatctttg ggacgtcaaa
6721 cttaaaatcc cctttacttc cttggaaacc ctgtagcatt agcccagaca tgtccctact
6781 cctccttgtg gcaaagagaa ggatctcgtc tttggtcccc agagttctgg cctaagcctc
6841 cctccaggag ggaagatgag tgttcagaca ctcagagtag ctgggggaga cacaggcctg
6901 tgaaattatc ctggctcaac tattaggtcg gcagaatccc agtgaaggga gccctacctc
6961 tgagccccat ctaagctttg gctatgggtg gggcagataa gcaggaatcc atccctatag
```

FIGURE 6D

```
7021 gctcaatgcc aacaccctta ggtgaaactc ttgatgaaac ttgaggccag ggctccggca
7081 agcagggaaa gaacgttggc aacagaggtc tccatctctg aggactctgc caggggtcag
7141 agatggggca atggtcaaaa ggaaggaaca ggccaggcac agtggctcat gcccataatc
7201 ccagcacttt gggaggctga ggcaggagga tcgcttgagc ccaggagttt gagacctgcc
7261 tgggcaatgt agtgagatct gctctctatt taaaaaaaaa aaaaaggaaa gaacaagtaa
7321 acttctgaga aacaggctgg gggaggcatc acgtagctgg aattgctgcc ccataaaaca
7381 gaatggtatg tgtcactgcc acctcccttt ctcagtcctc tctctcccca ggttgctagc
7441 gtccccctgg gggatcaaac tggactgctt cccagcctca gacagagagc agtctgagtc
7501 aggcaggaaa gtgggacagc cggggagctg gaccccaccc tctgtgagcc ccgctggtac
7561 ctgatggcat gtggcttgga gagggcaggt gacctggcgt ggagggccag agggtaaatc
7621 ctcaaacaag tggcaacagg ccaccaactt gaaagggaaa attgtgtagt gatgggaaat
7681 gtgtccaaca aacctactgg gtgactaatt acaaaggctg ggctggagct tcagaggctg
7741 cttgttaaac acttcattaa gcggcactct gaaagctgcc acctgcgcat tctgggagct
7801 cagaggggac cctgaggggg aatgaggcct ggaggatgga accatcttca ggtagactga
7861 gaaggagcct ggatctcact tccaaacaca gtctggagct cataggtcag aggcctcaat
7921 gggagaaaag ctaaaggaag agggtgcaga aaggagtttc agggaattgg tggctatgtg
7981 actttgagca aatctcaccc ctctctgaga cttagtgttc ccatctctat ggtcctgtgt
8041 gtgtcacaga gacatggtgg ggattaaatt cgatcgtgat atgaaagtgc ttgggaaact
8101 ccatggccct acctaaacat gagttatcct cacctgaacc aaggggggaa gttacctggc
8161 aggattagga accccatcct cctgaacctt tatgggctct gtcgaggctg aagcagccag
8221 gggctaaagc cagtccttag cccctggaag ggcactgtga aagtggatct gatttgagaa
8281 gccgtttcct gatgtgggca gccatgtgat gccagccccg aacaagaggg ggcagcctgg
8341 agcctggaaa ggtgccagtg caggtggggc ccacgcccag atttctcctg ctgactgttc
8401 tgatgattca cccccacatc ccagcctttt tacctttact gcagagccgg aaagggtgtg
8461 gggaagagag gagagggagg caggtcttgg gccctggtcc cgccccctgc tcctccccac
8521 ccttctctgg gcctggccac ccagccaaaa ggcaggccaa gagcaggaga gacacagagt
8581 ccggcattgg tcccaggcag cagttagccc gccgcccgcc tgtgtgtccc cagagccatg
8641 gagagagcca gtctgatcca gaaggccaag ctggcagagc aggccgaacg ctatgaggac
8701 atggcagcct tcatgaaagg cgccgtggag aagggcgagg agctctcctg cgaagagcga
```

FIGURE 6E

```
8761 aacctgctct cagtagccta taagaacgtg gtgggcggcc agagggctgc ctggagggtg
8821 ctgtccagta ttgagcagaa aagcaacgag gagggctcgg aggagaaggg gcccgaggtg
8881 cgtgagtacc gggagaaggt ggagactgag ctccagggcg tgtgcgacac cgtgctgggc
8941 ctgctggaca gccacctcat caaggaggcc ggggacgccg agagccgggt cttctacctg
9001 aagatgaagg gtgactacta ccgctacctg gccgaggtgg ccaccggtga cgacaagaag
9061 cgcatcattg actcagcccg gtcagcctac caggaggcca tggacatcag caagaaggag
9121 atgccgccca ccaaccccat ccgcctgggc ctggccctga acttttccgt cttccactac
9181 gagatcgcca acagccccga ggaggccatc tctctggcca agaccacttt cgacgaggcc
9241 atggctgatc tgcacaccct cagcgaggac tcctacaaag acagcaccct catcatgcag
9301 ctgctgcgag acaacctgac actgtggacg gccgacaacg ccggggaaga gggggggcgag
9361 gctccccagg agccccagag ctgagtgttg cccgccaccg ccccgccctg ccccctccag
9421 tcccccaccc tgccgagagg actagtatgg ggtgggaggc cccacccttc tcccctaggc
9481 gctgttcttg ctccaaaggg ctccgtggag agggactggc agagctgagg ccacctgggg
9541 ctggggatcc cactcttctt gcagctgttg agcgcaccta accactggtc atgcccccac
9601 ccctgctctc cgcacccgct tcctcccgac cccaggacca ggctacttct cccctcctct
9661 tgcctccctc ctgcccctgc tgcctctgat cgtaggaatt gaggagtgtc ccgccttgtg
9721 gctgagaact ggacagtggc aggggctgga gatgggtgtg tgtgtgtgtg tgtgtgtgtg
9781 tgtgtgcgcg cgcgccagtg caagaccgag actgagggaa agcatgtctg ctgggtgtga
9841 ccatgtttcc tctcaataaa gttcccctgt gacactcctc ctgtctctct tccagttctt
9901 ggcgatgggc tgggagtggg actggaatct gacttagaga ccctgacttt ggacctctga
9961 gttagggccc tgaactccct aggtggctca gtggcccgca cgcaagactt tgagtccagg
10021 tgaggccggg gtcc
```

FIGURE 6F

H.sapiens Wilms tumor (WT1) gene promoter.   ACCESSION No. X74840

```
   1 agcttgcagc cccagcccgg gccagccagg tacaggaggc cggactgcaa ccggttgctt
  61 ccctcccgtc gcgcctggcc gtcccacgct gcgccgtcgc tgctgcctcc tggcgcccct
 121 gggattttat acgcacctct gaaacacgct ccgctccggc ccccggttct tctccttgcc
 181 taggggttgt ttcccaatag atactgactc ctttagaaga tccaaaaacc aaaccaaaac
 241 accccctacc cgccccaaac acctgctctg gggcgcgggg gctgccaaac agagactaga
 301 cgaagggagt cagatttagc gaantcttcg agctcccaaa gattcgaaca ctaactcgcg
 361 cccgtgggcc gatggaggtt ctccctactc cactccttgg tcccctaac tggcttccgc
 421 ctcctggtca atcactgagc aaccagaatg gtatcctcga ccagggccac aggcagtgct
 481 cggcggagtg gctccaggag ttacccgctc ctgccgggct tcgtatccaa accctcccct
 541 tcacccctcc tccccaaact gggcgccagg atgctccggc cggaatatac gcaggctttg
 601 ggcgtttgcc caagggtttt cttccctcct aaactagccg ctgttttccc ggcttaaccg
 661 tagaagaatt agatattcct cactggaaag ggaaactaag tgctgctgac tccaatttta
 721 ggtaggcggc aaccgcttcc gcctggcgca aacctcacca agtaaacaac tactagccga
 781 tcgaaatacg cccggcttat aactggtgca actcccggcc acccaactga gggacgttcg
 841 ctttcagtcc cgacctctgg aacccacaaa gggccacctc tttccccagt gaccccaaga
 901 tcatggccac tcccctaccc gacagttcta gaagcaagag ccagactcaa gggtgcaaag
 961 caagggtata cgcttctttg aagcttgact gagttctttc tgcgctttcc tgaagttccc
1021 gccctcttgg agcctacctg cccctccctc caaaccactc ttttagatta acaaccccat
1081 ctctactccc accgcattcg accctgcccg gactcactgc ttacctgaac ggactctcca
1141 gtgagacgag gctcccacac tggcgaaggc caagaagggg aggtgggggg agggttgtgc
1201 cacaccggcc agctgagagc gcgtgttggg ttgaagagga gggtgtctcc gagagggacg
1261 ctccctcgga cccgccctca ccccagctgc gagggcgccc ccaaggagca gcgcgcgctg
1321 cctggccggg cttgggctgc tgagtgaatg gagcggccga gcctcctggc tcctcctctt
1381 ccccgcgccg ccggcccctc ttatttgagc tttgggaagc tgagggcagc caggcagctg
```

FIGURE 7A

```
1441 gggtaaggag ttcaaggcag cgcccacacc cgggggctct ccgcaacccg accgcctgtc
1501 cgctccccca cttcccgccc tccctcccac ctactcattc acccacccac ccacccagag
1561 ccgggacggc agcccaggcg cccgggcccc gccgtctcct cgccgcgatc ctggacttcc
1621 tcttgctgca ggacccggct tccacgtgtg tcccggagcc ggcgtctcag cacacgctcc
1681 gctccgggcc tgggtgccta cagcagccag agcagcaggg agtccgggac ccgggcggca
1741 tctgggccaa gttaggcgcc gccgaggcca gcgctgaacg tctccagggc cggaggagcc
1801 gcggggcgtc cgggtctgag cctcagcaaa tgggctccga cgtgcgggac ctgaacgcgc
1861 tgctgcccgc cgtcccctcc ctgggtggcg gcggcggctg tgccctgcct gtgagcggcg
1921 cggcgcagtg ggcgccggtg ctggactttg cgcccccggg cgcttcggct tacgggtcgt
1981 tgggcggccc cgcgccgcca ccggctccgc cgccaccccc gccgccgccg cctcactcct
2041 tcatcaaaca ggagccgagc tggggcggcg cggagccgca cgaggagcag tgcctgagcg
2101 ccttcactgt ccacttttcc ggccagttca ctggcacagc cggagcctgt cgctacgggc
2161 ccttcggtcc tcctccgccc agccaggcgt catccggcca ggccaggatg tttcctaacg
2221 cgccctacct gcccagctgc ctcgagagcc agcccgctat tcgcaatcag ggtaagtagg
2281 ccggggagcg ccccta
```

FIGURE 7B

Estrogen Receptor (ER): Homo sapiens estrogen receptor beta gene, promoter region and partial cds
Accession Number AF191544

1 actatagggc a**CGCG**tggt**C G**a**CG**gcc**CG**g gctggtattg atagatgcat tttcttcacc
61 ctcacctatc tttttctgcc tgttggctta tggttgaaat tccttcatga **CG**gtttccat
121 ttccagagat atcttgttaa caagtatata ccaccaaatg aagctgattt tttttttttt
181 ttttttttga gacagagtct **CG**ctctgt**CG** cccaggctgg aatgcagtgg **CGCG**atcttg
241 gctcactgca acctc**CG**cct cccatgttca ag**CG**attctc ctgcctcagc ctcctgagta
301 gctgggatta ctggcatgtg ccac**CGCG**tc cagccaattt ttgtattttt agtagaga**CG**
361 aggtttcacc atgttggtca ggctggtctc aaactcctga cct**CG**tgatc cacctgcctc
421 ggcctcccaa agtgctgaga ttataggtgt gagccaccat gcctggccat gaagctgatt
481 tttttaaacc atcatttaac attttctcca taaggtggca aggaggaaga gcatatgggg
541 actgggtact ttgagagacc ccaggacagg agacagggag gctgagattg gcatgttgtc
601 tgctgcagtt atttgccag**C G**acacactct ttc**CG**tccaa actaacttct ctgcctcaag
661 gacagggaga ctctgccttt caacctgaga gaaaccagga ctctcagctt taatgaaaat
721 tggacttagg gtggggcagt ggagactttt cacagctatt gtttagctga tgaagcagat
781 gcttctccat ctttggagcc tgtcttcatt acctgtggac ctcatcttta tcaacccaga
841 gcacacttg**C G**tctctctat tttggctaaa caccaaacag ctgaggctgg tactgtaaaa
901 ctttccctcc aaatgccccc cct**CG**tcttc ctctattaga gatctggatc acaaccctca
961 aaaaccatgt cccttatgcc acctgagtag atggtttgat gattaattag gcacagatgt
1021 gacactgggg gggtctcaca atggcctgtg ggtcacatgc tactttcctt ttcattttca
1081 tcagcaacag ctgccttaaa gccagttaag actgtggtcc tagtct**CG**ca ccctggggct
1141 cctgctgggg tgggtgaggg gaacacccca ttaagctggg ggaactgggg ctgccaccag
1201 gggg**CGCG**ag gggcctt**CG**c c**CG**agaagag gggtgggcag gtgcctccag **CG**gagaaggg
1261 **CG**c**CG**tggc**C G**gaggcacag gtctccc**CG**g tgccacttca agtgagtt**CG** aggaagtacc
1321 tgggatcttt gatctaa**CGC G**aaaggcctt cccagtgacc tcttgagggc tgagaaccca
1381 ctccctccac ctctagtcca **CG**gctttgcc actccagggc c**CG**aggtta**C G**tttgctgct
1441 ggggatttga caaacccaaa gcctctctgg tttcaccact ggctccttag aatcagacat
1501 ctgttctgaa tgacacttat gtgagtcagg ggctgagga**C G**tgatcct**CG** aagtgtggtc
1561 cccagactgg ctgtatcagt gt**CG**gcatcc cccaggacct ggttggaaat gcatattctc
1621 aggccctact ccagacctct taaatctgag actggggctg **CG**gggag**CG**c catctgtg**CG**

FIGURE 8A

1681 ccactatcct tgtgggtgga ccaggagt**CG** gtt**CG**agggt gctcccactt agaggtca**CG**
1741 **CGCG**g**CG**t**CG** gg**CG**ttcctg agac**CG**t**CG**g gctccctggc t**CG**gtca**CG**t gggctcaggc
1801 actactcccc tctaccctcc tct**CG**gtctt taaaaggaag aaggggctta t**CG**ttaagt**C**
1861 **G**cttgtgatc ttttcagttt ctccagctgc tggctttttg gacacccact cccc**CG**ccag
1921 gaggcagttg caag**CGCG**ga ggctg**CG**aga aataactgcc tcttgaaact tgcaggg**CG**a
1981 acagcagg**CG** g**CG**ac**CG**ctg ggc**CG**gggag ggacacc**CG** agctg**CG**a**CG** ggctctgggg
2041 ctg**CG**gggca gggctgg**CG**c c**CG**gagcctg agctgcagga ggtg**CG**ct**CG** ctttcctcaa
2101 caggtgg**CG**g **CG**ggg**CGCGC** **G**c**CG**gagac cccccctaat g**CG**ggaaaag ca**CG**tgtc**CG**
2161 [illegible]atttagag aaggcaaggc **CG**gtgtgttt atctgcaagc cattatactt gccca**CG**aat
2221 ctttgagaac attataatga cctttgtgcc tcttcttgca aggtgttttc tcagctgtta
2281 tctcaagac[redacted]gatataaa aaactcacca tctagcctta attctccttc ctcctacaac
2341 tgcagtcaat ccatcttacc cctggagca**C** **G**gctccatat acataccttc ctcctatgta
2401 gacagccacc atgaatatcc agccatgaca ttctatagcc ctgctgtgat gaattacagc
2461 attcccagca atgtcactaa cttggaaggt gggcc

FIGURE 8B

Unmethylated 288 BP

G gg**TG**ttttg agat**TG**t**TG**g FUM 21 BP AT 60

TG agttg**TG**a**TG** ggttttgg

ccaaaacc **CA**t**CA**caact **CA** RUM 20 BP AT 58

Methylated 181 BP

agagtagg**CG** g**CG**ag**CG**t FM 18 BP AT 60

CGggaaaag ta**CG**tgtt**CG** t

a[illegible]**CG**aaca**CG**ta ctttcc**CG** RM 20 BP AT 60

FIGURE 8C